

REMARKS

By the above amendment, the features of dependent claim 7 have been incorporated into parent claim 1 which has been amended to clarify features of the present invention that the opposed electrode which consists of a plurality of mutually isolated conductors 2a and 2b as illustrated in Figure 1 of the drawings of this application and which forms a first capacitatively coupled plasma generating means, as recited in claim 1 is a plate type electrode with the plurality of isolated conductors being supplied with high-frequency power by a single commonly shared power supply as represented by the power supply 9 in Fig. 1, supplying power to the isolated conductors 2a and 2b via the capacitor 11 and the inductors 12a, 12b which form the resonance circuit with the current of each of the resonance circuit is controlled commonly so that plasma distribution controllability is enhanced. Also claim 1 has been amended to clarify the feature that a resonance circuit includes both the inductor L and the capacitor C, at least one of which is controllable. Claim 1 also recites other features including the feature of claim 1 that the plasma processing apparatus includes a RF bias circuit which is separated from ground size to supply RF current to the substrate to be processed.

Furthermore, claim 2 has been amended in a manner which is considered to overcome the rejection thereof under 35 USC 112, second paragraph, in that claim 2 now recites that the second electromagnetic wave radiation plasma generating means is arranged that the plasma discharge is generated under an ECR condition controlled by a magnetic field formed by at least one coil, as represented by the at

least one coil 14 illustrated in Fig. 1 of the drawings of this application. As such, claim 2 should be considered to be in compliance with 35 USC 112.

The rejection of claims 1 - 2, 7 and 8 under 35 USC 103(a) as being unpatentable of Otsubo (JP Patent Publication 11-260596) in view of Sato et al (US 5,907,221) and the rejection of claim 3 under 35 USC 103(a) as being unpatentable over Otsubo et al (JP Patent Publication 11-260596) in view of Sato et al (US 5,907,221), further in view of Tobe et al (US 5,891,349), such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be

remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

As previously recited in claim 1, in accordance with present invention, plural LC circuits are formed including a separated path of an electrode 2a to process chamber 1c via plasma 15 and an electrode 2b to process chamber 1c via plasma 15, respectively and as now recited, a single commonly shared high-frequency power supply means 9 supplies power to such electrodes for controlling plasma distribution. Thus, by the present amendment, claim 1 has been clarified to clearly set forth that the resonance circuit includes both an inductor L and a capacitor C. Furthermore, claim 1 has been clarified to recite the feature of a single commonly shared high-frequency power supply means for supplying the high-frequency power to the plurality of isolated conductors of the opposed electrode, through a matching box so as to enable control of plasma distribution in the manner recited.

Turning to Otsubo, et al, irrespective of the position by the Examiner, there is no disclosure or teaching of the plurality of isolated conductors 71a, 71b and 71c, as

referred to by the Examiner, being connected to a matching box by supply of current through a current path of an inductor L and a capacitor C, as previously recited, nor that a resonance circuit is formed of the L and C, with the resonance of the resonance circuit being controlled by controlling at least one of the L and C, which form the resonance circuit. That is, the Examiner refers to a capacitor 83 and contends that a resonance of a resonance circuit including a capacitor is controlled, but there is no disclosure or teaching of a resonance circuit formed of an inductor L and a capacitor C or the utilization of an inductor L together with a capacitor C in the disclosure of Otsubo et al and operating in the manner defined. Furthermore, in Otsubo et al two RF power sources as represented by the power sources 81 and 82 in Figs. 15 and 16 are provided, such that it is apparent that Otsubo et al does not disclose or teach the now recited feature of a single commonly shared high-frequency power supply means for supplying said high-frequency power to said plurality of isolated conductors of said opposed electrode through a matching box. As such, applicants submit that claim 1, as amended, patentably distinguishes over Otsubo et al in the sense of 35 USC 103 and should be considered allowable thereover.

As to Sato et al, the Examiner cites this reference in that the Examiner recognizes that Otsubo et al fails to teach supplying a high-frequency power to the electrode through a matching box. The Examiner notes that Sato et al teaches the use of a matching box 165a and contends that it would be obvious to utilize the same in Otsubo et al. Applicants submit that irrespective of this position by the Examiner, Sato et al discloses an inductively coupled plasma reactor having antenna loops and a source power distribution controller. However, Sato et al does not

disclose or teach capacitatively coupled plasma generating means for controlling plasma density such that the Examiner's proposed combination represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 USC 103. See In re Fine, supra. Accordingly, applicants submit that contrary to the position set forth by the Examiner, Sato et al does not overcome the deficiencies of Otsubo et al in the sense of 35 USC 103 and claim 1 and the dependent claims patentably distinguish thereover.

With respect to Tobe et al, hereagain, this additional reference fails to disclose the claimed features of claim 1 and the other dependent claims and the proposed combination again represents a hindsight reconstruction attempt. Thus, applicants submit that claim 1 and the dependent claims also patentably distinguish over this proposed combination of references in the sense of 35 USC 103 and all claims should be considered allowable at this time.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance, and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing

of this paper, including extension of time fees, to Deposit Account No. 01-2135
(520.39737X00) and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Melvin Kraus', is written over a horizontal line.

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